

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

Title 40 of the Code of Federal Regulations section 122.48 (section 122.48) requires that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

- A.** Process water Monitoring Provision. Composite samples may be taken by a proportional sampling device approved by the Executive Officer or by grab samples composited in proportion to flow. In compositing grab samples, the sampling interval shall not exceed one hour.
- B.** If the Discharger monitors any pollutant more frequently than required by this General Permit, using test procedures approved by section Part 136 or as specified in this General Permit, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the annual discharger monitoring reports.
- C.** Representative sampling shall be conducted in a manner consistent with the Technical Standards for Nutrient Management (Attachment C).

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this General Permit:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
001	EFF-001	Location where representative samples of discharges from the production area(s), after exiting the production area and before contact with the receiving water and/or dilution by any other water or waste, can be collected. If more than one production area discharge point is authorized by the General Permit, monitoring locations shall be named EFF-001A, EFF-001B, etc.
---	EFF-002	Location where representative discharges from the land application area(s), after exiting the land application area and before contact with the receiving water and/or dilution by any other water or waste, can be collected. If more than one land application area discharge point is authorized by the General Permit, monitoring locations shall be named EFF-002A, EFF-002B, etc. Note: These requirements apply to discharges from land application areas that are not exempt agricultural storm water discharges, and are therefore unauthorized discharges.
002 ¹	RGW-001	Groundwater within the influence of the land application area monitored at groundwater monitoring wells, if any, installed to implement the groundwater monitoring program required by the Regional Water Board. If more than one groundwater monitoring well is installed, monitoring locations shall be named RGW-001, RGW-002, etc.
Manure, Process Water, Litter, Bedding	MAN-001	Location where representative samples of manure, process water, and/or litter, bedding to be land applied can be collected. If more than one land application area discharge point is authorized by the General Permit, monitoring locations shall be named MAN-001A, MAN-001B, etc.
Soil	SOL-001	Location where representative samples of soil from the land application area(s) can be collected.
Surface Runoff	SWR-001	Watercourses that flow through the dairy property at the point where the watercourse leaves the property. If more than one watercourse is used for monitoring, locations shall be named SWR-001, SWR-002, etc.
---	Well-001	Groundwater from the onsite domestic well and/or agricultural supply well, collected from the access nearest the well head. If more than one well is used for monitoring, locations shall be named Well-001, Well-002, etc.

¹ Applies to only to Dischargers required to prepare a ground water monitoring program and conduct groundwater monitoring as described in section VIII. A. of the MRP.

III. INFLUENT MONITORING REQUIREMENTS – NOT APPLICABLE

IV. EFFLUENT MONITORING REQUIREMENTS – APPLICABLE TO ALL CAFOS

A. Monitoring Locations EFF-001 and EFF-002

1. The Discharger shall monitor production area and land application area discharges at EFF-001 and EFF-002 (including EFF-001A, EFF-001B, etc., and EFF-002A, EFF-002B, etc., as applicable) as follows.

Table E-2. Effluent Monitoring – Monitoring Locations EFF-001 and EFF-002²

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Volume	Gallons or Acre-inches	Estimate	Once per Discharge	---
pH	standard units	²	Once per Discharge	Field Measurement
Total Nitrogen	mg/L		Once per Discharge	40 CFR 136
Nitrate as N	mg/L		Once per Discharge	40 CFR 136
Total Ammonia as N	mg/L	²	Once per Discharge	40 CFR 136
Total Kjeldahl Nitrogen	mg/L	²	Once per Discharge	40 CFR 136
Total Phosphorus as P	mg/L	²	Once per Discharge	40 CFR 136
Total Dissolved Solids	mg/L	²	Once per Discharge	40 CFR 136
Biochemical Oxygen Demand, 5-Day @ 20°C (BOD ₅)	mg/L	²	Once per Discharge	40 CFR 136
Total Suspended Solids (TSS)	mg/L	²	Once per Discharge	40 CFR 136
Fecal Coliform	MPN/100 mL	²	Once per Discharge	40 CFR 136
Temperature	°C	Grab	3 times per Year	Meter

2. The Discharger shall also maintain a record of the following information for all discharges at EFF-001 and EFF-002:
 - a. Date and time of discharge
 - b. Approximate duration of discharge

² Discharges at EFF-002 that are in compliance with both the CAFO's NMP and the recordkeeping requirements of section X of the MRP are exempt agricultural storm water discharges, and are exempt from the monitoring requirements of Table E-2. Discharges at EFF-002 that are not in compliance with both the NMP and recordkeeping requirements are unauthorized discharges, and monitoring according to Table E-2 shall be conducted.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS – NOT APPLICABLE

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE AND GROUNDWATER

A. Surface Water Monitoring

1. Monitoring Location SWR-001, SWR-002, etc.

- a. Beginning October 1, 2012, the Discharger shall conduct water course monitoring at SWR-001, SWR-002, etc., during or directly following each of 3 storm events exceeding 1 inch rain and occurring a minimum of one month apart in accordance with the specifications below:

Table E-3. Watercourse Monitoring Requirements – Monitoring Location SWR-001, SWR-002, etc.

Parameter	Units	Sample Type	Minimum Sampling Frequency ³	Required Analytical Test Method
Total Suspended Solids	mg/L	Grab	3 times per Year	40 CFR 136
Ammonia -Nitrogen	mg/L	Grab	3 times per Year	40 CFR 136
Total Nitrogen	mg/L	Grab	3 times per Year	40 CFR 136
Total Phosphorus	MPN/100 ml	Grab	3 times per Year	40 CFR 136
Specific Conductance	micromhos	Grab	3 times per Year	Meter
pH	Standard Units	Grab	3 times per Year	Meter
Temperature	°C	Grab	3 times per Year	Meter

B. Groundwater Monitoring (when required)

1. Monitoring Location Well - 001

- a. The Discharger shall conduct groundwater monitoring at Well-001, Well-002, etc. in accordance with the specifications below:

Table E-4. Groundwater Monitoring Requirements – Monitoring Location Well-001, Well-002, etc.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Dissolved Solids	mg/L	Grab	Annually	40 CFR 136
Nitrate-Nitrogen	mg/L	Grab	Annually	40 CFR 136
Total Coliform	MPN/100 ml	Grab	Annually	40 CFR 136
Depth to Groundwater	feet	Observation	Semi-Annually ³	Measurement

2. Monitoring Location RGW - 001

- a. The Discharger shall determine the need for conducting groundwater monitoring through an evaluation of the potential for nitrate leaching from land application fields to groundwater. The Discharger shall utilize the University of California Center for Water Resources Nitrate Groundwater Pollution Hazard Index, available at <http://ucanr.org/sites/wrc/>.

A hazard index result of greater than twenty (20) is the trigger to develop and implement a groundwater monitoring program. Alternately, the Discharger can evaluate practices that are criteria of the hazard index that can be altered to reduce the hazard ranking below 20. The groundwater monitoring program requires the installation of monitoring wells at the facility. Dischargers that exceed the Nitrate Groundwater Pollution Hazard Index trigger of twenty (20) shall monitor all monitoring locations RGW-001, RGW-002, etc., as follows.

Table E-5. Groundwater Monitoring Requirements – Monitoring Location RGW-001, RGW-002, etc.

Parameter	Units	Sample Type	Minimum Sampling Frequency ³	Required Analytical Test Method
Total Dissolved Solids	mg/L	Grab	Semi-Annually	40 CFR 136
Nitrate-Nitrogen	mg/L	Grab	Semi-Annually	40 CFR 136
Total Coliform	MPN/100 ml	Grab	Semi-Annually	40 CFR 136
Depth to Groundwater	feet	Observation	Semi-Annually	Measurement

- b. Dischargers shall conduct the Nitrate Groundwater Pollution Hazard Index within 1 year of the effective date of the General Permit, and shall submit

³ Semi-annual depth to groundwater measurements shall be conducted once in April and once in October each year.

the Groundwater Monitoring Plan, if applicable, within 18 months of the effective date of the General Permit. Monitoring shall be implemented at the frequency provided in Table E-4.

IX. OTHER MONITORING REQUIREMENTS

A. Production Area Visual Inspections – Applicable To All CAFOs

1. The Discharger shall conduct visual inspections of the production area(s) as follows.

Table E-6. Production Area Visual Inspections

Inspection Type	Minimum Monitoring Frequency
All water lines, including drinking water and cooling water lines	Once per Day
All storm water diversion devices, runoff diversion structures, and devices channeling contaminated storm water to process water storage and containment structures	Once per Week
Process water impoundments, ponds, noting the level of all as indicated by the depth marker installed in accordance with Attachment B of this General Permit.	Once per Week
Manure, litter, bedding, and feed storage areas, noting any discharges from the property that is under control of the Discharger	Once per Day during significant storm events
All storm water containment structures	After each significant storm event

2. The results of all inspections required by this section shall be recorded in accordance with section X of the MRP. Records shall be maintained on site at the permitted facility for a period of 5 years and shall be available upon request by the Regional Water Board.

B. Land Application Visual Inspections – Applicable to all CAFOs that Apply Manure, Litter, Bedding, or Process Water to Land

1. The Discharger shall conduct visual inspections of the land application area(s) as follows.

Table E-7. Land Application Area Visual Inspections

Inspection Type	Minimum Monitoring Frequency
Land application equipment, noting leaks, any corrective actions taken, and date of inspection.	For process water, once per event. For solid manure, at the Discharger's discretion but not less than once per year.
Land application areas, noting any discharges from the property that is under control of the Discharger.	Once per day during significant storm events

- The results of all visual inspections required above, and the additional recordkeeping requirements in Table E-7 below, shall be recorded in accordance with section X of the MRP. Records shall be maintained on-site at the permitted facility for a period of 5 years and shall be available upon request by the Regional Water Board.

Table E-8. Land Application Recordkeeping Requirements

Activity	Frequency
Expected crop yields	Once per Year
Date of application	Once per Event/Field
Weather conditions at time of application and for 24 hours prior to and following application	Once per Event/Field
Test methods used to sample and analyze manure, litter, bedding, process water and soil and results	Once per Year
Explanation of basis for determining manure application rate	Once per Year
Calculations showing total nitrogen and phosphorus to be applied to each field	Once per Year
Calculations showing total amount of nitrogen and phosphorus actually applied to each field	Once per Year
Method used to apply manure, litter, bedding or process water	Once per Event/Field

- Discharges from the land application area(s) shall be monitored according to IV.A of the MRP.

C. Manure, Litter, Bedding, and Process water Monitoring – Applicable to CAFOs that Apply Manure, Litter, Bedding, or Process Water to Land Under the CAFO’s Ownership or Operational Control or that Transfer Manure, Litter, Bedding, or Process Water to Other Persons

1. The Discharger shall conduct sampling and analysis as follows. This monitoring is for nutrient management and is expected to be part of the Nutrient Management Plan for Dischargers that land apply manure, litter, bedding, or process water. All Dischargers are expected to provide the results of the required monitoring to recipients of any manure, litter, bedding, or process water transferred to other persons, in accordance with Attachment B of the General Permit. Process water and manure shall be analyzed separately to determine the nutrient and salt content.

Table E-9. Manure, Litter, Bedding, and Process Water Monitoring – Monitoring Location MAN-001, MAN-001A, etc.

Parameter	Sample Type	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Ammonium as N	Liquid	mg/L	Consistent with Technical Standards for Nutrient Management (Attachment C)	Once per Year	Consistent with Technical Standards for Nutrient Management (Attachment C)
	Solid	mg/kg			
Nitrate as N	Liquid	mg/L			
	Solid	mg/kg			
Total Nitrogen	Liquid	mg/L			
	Solid	mg/kg			
Total Kjeldahl Nitrogen	Liquid	mg/L			
	Solid	mg/kg			
Phosphorus, Total	Liquid	mg/L			
	Solid	mg/kg			
General Minerals ⁴	Liquid	mg/L			
	Solid	mg/kg			
pH	All	pH units			
Percent Moisture	Solid	%			

2. Manure transfer records shall be maintained in accordance with the recordkeeping requirements contained in section X of the MRP.

⁴ General minerals includes bicarbonate, boron, calcium, carbonate, chloride, magnesium, potassium, sodium, and sulfate, reported individually.

D. Soil Monitoring – Applicable to CAFOs that Apply Manure, Litter, Bedding, or Process Water to Land Under the CAFO’s Ownership or Operational Control

1. Dischargers that land apply manure, litter, bedding, or process water shall conduct soil sampling and analysis for each field as follows.